

ABSTRACT

Systems and methods for routing packets by nodes in an ad hoc network in accordance with a link quality source routing protocol are disclosed. Route discovery, route maintenance, and metric maintenance are designed to propagate and keep current link quality measurements. Metric maintenance includes a reactive approach for links that a node is currently using to route packets, and a proactive mechanism for all links. Nodes are configured to include a send buffer, a maintenance buffer, a request table, link quality metric modules, and preferably a neighbor cache and a link cache. The invention allows for asymmetric links in the network. The invention may be implemented within a virtual protocol interlayer between the link and network layers. The invention may employ any particular link quality metrics, including metrics based on probing techniques as well as metrics based on knowledge gained in other ways.